

cumstances. 2. The number of pieces to be machined should receive proper consideration in the design, both in regard to cost of the fixture and in regard to probable necessity of replacements. 3. Weight and rigidity of the fixture. This point is naturally somewhat dependent upon the class of work for which it is intended, and the convenience of handling. 4. Gibs. In the case of indexing or sliding fixtures, suitable provision should be made for adjustment by means of gibs or straps, in order that natural wear may be taken up. 5. Revolving fixtures. Fixtures which revolve about a fixed center, if subjected to hard usage or if used for a great number of pieces, may be advantageously provided with means of adjustment about the center of revolution. This is a refinement that is very infrequently used, and it is not necessary in the majority of cases unless extreme accuracy is required. There are a few points in construction which are applicable principally to individual cases. These will be referred to later.

Drill Jig for a Receiver Forging. — The work *A*, shown in Fig. i, has been previously faced, milled and bored, and tapped at the end *K*, leaving four holes *C'*, *I*?, *I*£, and *P* to be drilled on the jig shown in the illustration. This type of jig is "built up" entirely from steel parts, a rectangular plate forming the base of the jig. The work is laid clown on the hardened pin *B* and the heads of the two jig bushings *C* and *D* which are ground to a uniform surface. The threaded plug at *A*" is provided with a knurled head *L* and draws the end of the receiver up against the steel block *N* which is screwed and doweled to the jig base. A thrust washer is provided at *M* and a slight float is allowed between the block and the plug. The stud *G* is screwed into the plate and the set-screw *H* running through it forms an adjustable stop for the side of the receiver, check-nuts being provided at *I*. After the work has been drawn up by the threaded plug at *K*, the set-screw in the stud *P* is used to push the work over against the point *H*.

The steel clamp *O* is slid into position and tightened, and the set-screw *R* in the swinging clamp *Q* at, the other end of the work is brought to bear at that point. The clamp *Q* is